GAS JOURNAL

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COVENTRY PLANS AND HOPES

NOT many months ago the recognized leaders of the gas industry would not have taken kindly to the idea of the Minister of Fuel and Power posing as the industry's chief, yet such is the remarkable working of British democracy that it was accepted as the most natural thing in the world that Mr. Gaitskell should respond to the "Gas Industry" toast at the luncheon which followed last Wednesday's inspection of the Coventry Gas-Works. The occasion was (presumably—for vesting date has not yet been fixed) the last inspection by the City fathers of the undertaking which, in its 65 years of one form of public ownership, has been developed into one of the most modern and efficient of its kind in the country. Notwithstanding the regret which will inevitably accompany the handing over of the enterprise from local to State ownership, the Corporation, its Gas Committee—for the membership of which it appears there has always been keen competition—and the Engineer and Manager, past and present, will have the satisfaction of transferring an extremely valuable asset, and one which—whatever form the much talked-of larger units of administration may take—will fit in well with the idea of concentrating manufacture in the larger and more economically run works.

It was perhaps only a coincidence that on the very eve of Mr. Gaitskell's visit the City Council had confirmed a recommendation from the Gas Committee to increase the price of gas by a halfpenny per therm. The increase will yield £40,000 in a full year and will still leave the basic price of gas in the City only a halfpenny a therm above the price ruling in 1942, since when the price of coal has gone up by 28s. a ton. So far from frowning on the increase the Minister warmly welcomed it as a contrast to the attitude of a number of municipal electricity undertakings which were diffident about putting up their prices immediately before nationalization and thus left the new Area Electricity Boards to cover their losses. While Colonel H. C. Smith tactfully avoided making reference to nationalization, Mr. Gaitskell took the opportunity of commending it as the one answer to the long-felt and admitted need for larger administrative units. At the same time he saw no ground for fear that the new Area Gas Boards would be over-centralized. He was careful to say the set-up devised for the gas industry was not necessarily superior to the set-up in electricity or in coal, but it was a structure which was more appropriate to the gas industry. He spoke hopefully of continued development in an atmosphere of competition with other fuels, and of sustained interest in the industry on the part of local authorities, which would be "heavily represented" on the Consultative Councils which the Ministry was to establish.

The Minister was remarkably energetic in his tour of the works, and as he came on to the crown of the waterless holder from the staircase leading to the piston he told us it was the first time he had ever been on or in a holder. From his 250 ft. high vantage point he viewed admiringly the 70 acres of the Foleshill site, already largely developed, on which it is hoped ultimately to develop a works producing 60 mill. cu.ft. of gas per day.

THE JUNIORS

THE Junior Gas Associations throughout the country have started the 1948-49 session with a swing, with enthusiasm undiminished by thoughts of nationalization of the gas industry. Nationalization has naturally been in the picture in several of the presidential addresses already given, and the hope has been expressed that the Area Boards will regard the aims and purposes of the associations with sympathy and understanding. We entirely endorse this hope. The junior associations have become an important force in the advancement of the industry. Any move to discourage their efforts would be a sorry one, and we believe that no such move will, in fact, eventuate, whatever modifications may in the future prove desirable. From their inception one after another we have followed the activities of these lively and sincere junior bodies keenly and, in fact, with ever-increasing respect and admiration.

We think the industry is lucky in having a training-ground, voluntarily organized throughout, for responsibility and the development of intelligence; and we were glad to refer in our columns last week to the formation of the Northern Junior Gas Association. As we said, the Association, in common with all the other bodies affiliated to the British Junior Gas Associations' Joint Council, will provide the juniors in the area covered with those technical facilities which only a junior gas association can provide. "Its formation," we added, "with the advent of nationalization, is a sign of strength and consolidation." About the Auxiliary Section of the North of England Gas Managers' Association (the senior organization in the area covered, which has acted with promptitude and to practical effect in assisting the setting-up of the Northern Juniors) we have for long been in doubt. We have felt for many years that the Auxiliary Section was neither senior nor junior and that for some obscure reason it refused to enter into the spirit of the junior associations, exhibiting an aloofness—and not a highly effectual one—from the rest of the juniors, the while not being a senior organization. If we are wrong in this, we would add that our columns are freely open to Auxiliary devotees to put forward their views. We are of opinion that, in the interests of consolidarity and, indeed, on the basis of ordinary logic, the Auxiliary Section of the North of England Gas Managers' Association should consider the all-round virtue of a wholly honourable, quiet, dignified, retirement.

So many problems stare us in the face; hence our insistence on consolidarity, irrespective of what peculiar bumps may appear on the pyramidal structure of a public utility industry into the composition of which has already entered an ideological element the life of which no scientifically trained engineer (irrespective of country) could possibly assess; hence our welcome to the Northern Junior Gas Association,

following the establishment recently of the Eastern Juniors, who have shown commendable form since their vigorous start from their marks in July of 1947. The proceedings of the whole of the Junior Associations are published monthly in "GAS." The October, 1948, issue of "GAS" will, in itself, constitute proof of the vitality of the junior associations, and within its covers will rest the reason for our faith in the Juniors.

NEW DISTRIBUTION SYSTEMS

IN Great Britain to-day the attitude towards the planning of gas distribution systems is very different from the ideas which obtained before the last war. We do not put down this change as being due to the influence of nationalization. We regard the change as the result of engineering evolution, minus doctrinaire; in other words, as the application of common sense. Regionalization of gas supply was advocated long before anyone became dyed in the hue of nationalization. Pre-war, regionalization of distribution was accepted by thoughtful and progressive people within the gas industry as an essential to the development of service to the consumer—domestic, commercial, industrial alike. Barriers to the economic fulfilment of plans existed as part of out-worn legislation which the Gas Act has wisely dismissed *in toto* as an anachronism; but nationalization *per se* neither exercises nor ever can exercise any engineering-cum-technical wand. Indication of the changed conception which we have in mind regarding distribution of gas was apparent in the paper which Mr. E. M. Edwards, of Port Talbot, gave to the Wales and Monmouthshire Association of Gas Engineers and Managers ("JOURNAL" of Sept. 29, in which issue the paper in question was published in full). The contribution was practical and was indicative of the author's experience on the subject. Mr. Edwards put forward several pertinent queries. He asked, for example, why a standard specification and standard conditions of contract for mainlaying work should not be available to all gas undertakings; and he wondered whether we could not benefit in mainlaying work generally by greater attention to, and appreciation of, American methods, chiefly mechanical, which have proved of such success in the States. He admitted that there are obviously certain cases where the use of machines would be neither economical nor practicable over here, but he rightly argued that, though in the British gas industry mechanization of gas manufacturing operations has been brought to a very high standard, mechanization of mainlaying and other distribution work has not progressed to the same extent. Provided that the use of machines can be justified economically for their appropriate tasks, surely present-day labour costs, availability of suitable labour, and the speed with which work can be carried out, point to the need to take full advantage of the mechanical facilities that now exist for alleviating gas distributing difficulties. Modern ideas on the regionalization of gas supply call for new ideas on gas distribution practice and an analytical scrutiny of accepted, though in some cases stereotyped and obsolescent, methods.

GAS IN THE ISLE OF WIGHT

We had the pleasure last Friday of renewing our contact with members of the Isle of Wight Gas Association, of whose activities we have recorded little or nothing in recent years. The occasion was the inspection of the new vertical retort installation erected by Drakes, Ltd., at the works of the Cowes U.D.C. Gas Department, a works which, from the point of view of output, contrasted strikingly with that which we had visited a couple of days earlier at Coventry, where almost as much gas is sent out in one week as in a whole year at Cowes. Cowes, of course, has little or no industrial load but it has several things in common —a pride in the modernity of its latest extension, a healthy, friendly rivalry with neighbouring gas undertakings, and a supreme desire to render the best consumer service at the lowest possible price. The new plant at Cowes, quite small by comparison with the average installation in this country, presented some difficult problems, not the least being that of building a secure foundation on reclaimed land. One pile, under a 50-ton test, went down some 4½ in. in a single night, and in the end the foundation contractors had to put in three times as many piles as they originally contemplated. The Cowes Gas Committee, however, is obviously proud of the ultimate result, and its neighbours came to offer congratulations. The Chairman of the Isle of Wight Gas Association proposed the toast of the Cowes U.D.C., and the Secretary of the Association, Mr. L. G. Payne (Managing Director of both the East Wight and Ryde Gas Companies) was there to represent the bulk of the island's gas interests. In all there are six undertakings on the island, four companies and two local authority undertakings, and between them they do not produce more than 1,000 mill. cu.ft. a year, the smallest two being responsible for about 90 mill. cu.ft. between them. The four larger ones are very much alive to their responsibilities and opportunities. According to the provisional list published in the "JOURNAL" last week the whole island will form part of the territory of the Southern Area Gas Board when nationalization is accomplished. We imagine that it wou'd form a convenient sub-area under the contemplated localization of administration. During the Cowes inspection we sensed a considerable amount of parochialism; with the breaking down of boundaries under the nationalization plan the way should be clear for very effective co-operation all over the island with perhaps some extension of supplies to those stretches of "no man's land" which at present separate one area from another.

COKE OVEN GAS AT NEWPORT

A striking paper has been presented to the Wales and Monmouthshire Junior Gas Association by Mr. A. H. Dyer, Deputy Engineer of the Newport (Mon.) Gas Company, now President of the Association. Much of Mr. Dyer's paper concerned the use of coke oven gas to satisfy increasing demand, and the way, when coke ovens supplies had reached a satisfactory stage, in which output was built up by a concentrated attack on industry and local authorities. This paper will appear in full in the next issue of "GAS." In 1937, said Mr. Dyer, when the sales of his Company amounted to 306,498,000 cu.ft., a coke oven supply was taken from coke ovens some 10½ miles away, necessitating the installation of compressing plant and meter at the coke ovens, and a 12 in. high-pressure main to the inlet of the purifiers at the Company's Crindau Gas-Works. The coke oven supply available in 1937 was some 3 mill. cu.ft. per day of 500 B.Th.U. gas, but as average demand at that time was less than 1 mill. cu.ft. per day, it was felt that compressing plant capable of delivering for short periods double this quantity would be sufficient for many years to come. The Company was wrong in this assumption, but fortunately a meter capable of handling the whole of the gas available from the coke ovens was installed.

Early in 1938, when the coke oven supply had proved entirely satisfactory, strenuous efforts were made to develop output, with a concentrated attack on industry, bakers and confectioners, local authorities, and commercial premises. The aim was to show that gas would give greater efficiency and, in many cases, at considerably less cost than other fuels. In all cases offers were made that the Company would bear part of the cost of carrying out the experiments. Results have more than justified the small expenditure involved, for during 1938 a fair amount of progress was made, and then came an inquiry from a large firm proposing to erect a factory at Newport, requiring 3 mill. cu.ft. per day. Thus was started a new era in the prosperity of the Company. Since 1937 the annual quantity made and purchased has risen from 1,379,241 therms to 7,337,645 therms; the majority of the industrial load is spread over the 24 hours; and to-day practically all the bread in Newport is baked in gas-fired ovens. Naturally, all this development has brought its problems of storage, mainlaying and purification, but these have been tackled keenly and well by the Newport undertaking. Storage difficulties, in particular, are now being overcome by the erection of a 2 mill. cu.ft. capacity holder, and a small high-pressure holder. To augment supplies, the Company arranged in 1946 to take a bulk supply from the Cardiff Gas Company, and the installation of a new carburetted water gas plant of 1.75 mill. cu.ft. capacity. Mr. Dyer's paper shows how enthusiasm on the part of an undertaking's staff in boosting demand and handling technical problems to meet the new demand can pay dividends.

HARDER WORK

At a meeting last week between the Minister of Fuel and Power, representatives of the National Coal Board, and the

National Union of Mineworkers, Mr. Gaitskell said bluntly that there must be a better attendance at the pits, increased production by face-workers, and a more regular completion of the daily tasks on which output ultimately depends. It may be hoped that there will at last come a realization in the coal industry—and in Whitehall—that what is needed to increase coal production is simply harder work. This is a fact that has been obvious to all who have in the last few months followed the Board of Trade's *Digest of Statistics*. As a result of the meeting the National Coal Board and the National Union of Mineworkers have decided to set up a joint committee to see what steps can be taken to increase production. They had been told by Mr. Gaitskell that the coming of public ownership had brought a new and pressing responsibility, jointly shared by management and men, to ensure that the industry achieved maximum output and efficiency. The Board and the Union pledged themselves to pursue the following matters discussed at the meeting: (1) More regular attendance; (2) improved methods of organizing production, more efficient use of manpower, including an increase in the number of face-workers by upgrading and other methods; (3) Better results from extra-time working; and (4) improved output per manshift at the face and overall. Whatever methods the committee may decide upon, however, it seems unlikely that they can have the effect of raising output sufficiently to reach the end-of-year target of 200 mill. tons of deep-mined coal. To do it, the miners would have to produce a weekly average of 4.2 mill. tons during the 13 remaining weeks of the year, compared with the recent weekly output of only 3.87 mill. tons. Mr. Gaitskell has, too, to worry about the long-term trend of output. In a recent speech at Birmingham he stated that his problem really begins next year, when in addition to a higher export programme there will be an increased home consumption of 5 to 6 mill. tons.

THE FRENCH STRIKE

The importance of the gas industry in a nation's economy has, bitterly enough, been thrust before the public eye by the present strike in the French coal basins. The strike has led to the most serious difficulties in keeping the wheels of industry fuelled, and its economic effects have worsened because of the problem of keeping coke ovens in operation, while strikes have been breaking out locally among railway workers. M. Lacoste, Minister of Commerce and Industry, has stated that in view of the declaration by the miners' union leaders that the strike was likely to be a long one, the Government must take precautions by introducing electricity cuts. In a broadcast, he said that never before had a coal strike been conducted so as to deprive the big towns of the mining area of gas from the outset, and hospitals and public health services were unable to work properly. He called on the miners to reconsider their strike decision and warned them that the Government would take the necessary measures to maintain essential services, and would break off negotiations with organizations refusing to consider the national interest. The Government's immediate purpose is to keep the coke ovens going and to secure a reasonable provision of gas and electricity for the cities of the Nord, especially Lille, Roubaix, and Tourcoing. The closing of the coke ovens would have an even more serious effect than the immediate shortage of gas and electricity, because it might be some months before they could resume the supply of by-products without which many important industries would be bereft of raw materials.

AREA GAS UNDERTAKINGS

In last week's issue (pp. 35-36) we published a provisional list of the gas undertakings allocated to the Area Gas Boards under the Gas Act, 1948. Unfortunately there was an omission of a large and important undertaking—the South Suburban Gas Company—from those undertakings coming within the South Eastern Area Gas Board, and a further omission in the South Western Area Gas Board of the Wincanton Coal Gas Company, Ltd. (non-statutory). We hasten to remedy these omissions and ask readers to amend the "GAS JOURNAL" list accordingly.

Personal

A memorial service to the late Mr. J. S. Dow, who was closely associated with the Illuminating Engineering Society from its foundation in 1909 until his death on Aug. 12, will be held at the King's Chapel of the Savoy, Savoy Street, W.C.2, at 12 noon on Oct. 19.

Mr. ARTHUR WIDDOP has retired from the Bingley Gas Department after 40 years' service, and has been presented with a cheque from his fellow-employees and members of the Bingley Branch of N.A.L.G.O.

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A presentation has been made to Mr. L. M. WELDON, District Superintendent of the Hartlepool Gas and Water Company, in recognition of his 52 years with the Company. Mr. Weldon is Secretary of the Auxiliary Section of the North of England Gas Managers' Association. The presentation was made by Mr. J. R. Bradshaw, Managing Director.

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Mr. G. MCCANDLESS, Publicity Manager of the De La Rue Gas Development, Ltd., since the formation of the Company, and for their associate Company, Thomas Potterton (Heating Engineers), Ltd., is resigning to take up an appointment in a similar capacity for Fina Petroleum Products, Ltd. Prior to his association with the De La Rue Company, and up to the early part of the last war, Mr. McCandless was for nearly six years Publicity Manager of Ascot Gas Water Heaters, Ltd.

Diary

Oct. 15.—**Domestic Development Committee and S.B.G.I.**: Joint Consultative Committee, Gas Industry House, S.W.1, 2.30 p.m.

Oct. 16.—**London and Southern Junior Gas Association**: Visit to the Brentford Works of the Gas Light and Coke Company, 2.30 p.m.

Oct. 18.—**London and Counties Coke Association**: Finance Committee, 11 a.m.; Executive Committee, 11.30 a.m.; Central Committee, 1.30 p.m., Gas Industry House.

Oct. 19.—**Southern Association of Gas Engineers and Managers (Eastern District)**: Opening meeting, "The Future of Coke Marketing," J. O. Cooke, B.Sc., M.I.Mech.E., A.M.I.E.E., General Manager, London and Counties Coke Association, Gas Industry House, 2.30 p.m. Committee meeting, 11 a.m.

Oct. 19.—**Industrial Gas Development Committee**: Gas Industry House, 2.30 p.m.

Oct. 19.—**Institute of Fuel (London Section)**: "The Coal-fired Gas Turbine," F. B. Karthauser, W. V. Battocks, and F. F. Ross. Institution of Mechanical Engineers, Storey's Gate, 5 p.m.

Oct. 21.—**Midland Association of Gas Engineers and Managers**: General Meeting, Queen's Hotel, New Street, Birmingham, 2.30 p.m.

Oct. 26.—**Southern Association of Gas Engineers and Managers**: Annual General Meeting, Connaught Rooms, 2.30 p.m. (preceded by Council, 11 a.m.).

Oct. 28.—**Solid Smokeless Fuels Federation**: Executive Committee, Dorchester Hotel, Park Lane, W.1, 11.30 a.m.

Oct. 29.—**Manchester District Association of Gas Engineers**: Autumn Meeting, Hotel Majestic, Harrogate.

Oct. 29.—**London and Southern Junior Gas Association**: "The Preservation of Gas-works Structures by Paint," L. A. Ravald, M.Sc.(Tech.), A.R.I.C., Gas Light and Coke Company. Gas Industry House, 7 p.m.

Nov. 3.—**Manchester and District Junior Association of Gas Engineers**: Morning—Visit to Sutcliffe Speakman & Co., Ltd., Leigh; afternoon—Visit to Rochdale Corporation Gas Department. "Coke and Breeze Briquetting," Mr. Bardsley (Sutcliffe Speakman & Co., Ltd.).

Nov. 8.—**London and Counties Coke Association**: Technical Committee, 2.30 p.m., Gas Industry House.

Nov. 10.—**Eastern Junior Gas Association**: Visit to Ascot Gas Water Heaters, Ltd., Neasden.

INTERNATIONAL GAS CONFERENCE

After an inevitable interruption during the war years, the International Gas Union resumed its activities in 1946 and the 4th International Gas Conference will be held in London on June 15 to 17, 1949.

All members of the constituent national Gas Associations of the Union are invited to participate. Reports prepared by the national Associations and papers submitted by individual members, dealing with gas manufacture, distribution, and utilization, research, statistics, &c., will be presented and discussed. Arrangements are being made for visits to works of interest to gas engineers, excursions for ladies, social functions, and post-Conference tours.

Participants in the Conference are also invited to attend the 86th Annual General Meeting of the Institution of Gas Engineers, which will be held in London on June 13 and 14, 1949, immediately before the Conference. The President of the Conference is Colonel C. M. Croft, D.L., J.P. (Past-President of the Institution of Gas Engineers), and the General Secretary, Colonel H. Zollikofer (President of the Swiss Gas and Water Association). Further information may be obtained from Colonel Zollikofer or from the Secretaries of the individual national Gas Associations.

News in Brief

Members of the Cheltenham and District Branch of the Women's Gas Council visited the Stechford Works of the Parkinson Stove Company, Ltd., on Sept. 16, when, after a tour of the works, they were entertained at tea.

Gas Demand at Spalding will soon exceed carbonizing capacity, and the Urban District Council has authorized an application to the Ministry of Fuel and Power for permission to install two additional retorts at an estimated cost of £9,500.

The Recommendation of the Eire Labour Court for an increase of 6s. per week for the employees of Wicklow Gas Company has been rejected by the men, whose application was for an 11s. a week increase. The management of the Company has given notice to consumers that strike action has been threatened, and that supplies may be cut off.

Attention of Members of the Institution of Gas Engineers is drawn to a meeting of the London Section of the Institute of Fuel to be held at the Institution of Mechanical Engineers, Storey's Gate, on Oct. 19, at 5 p.m., at which a paper will be given on "The Coal-fired Gas Turbine," by F. B. Karthauser, W. V. Battocks, and F. F. Ross. Dr. D. T. A. Townend, the new President, will be in the chair. Any members of the Institution wishing to attend this meeting will be welcome.

The Harwich and Parkeston Football Club is well known in East Anglian football circles. It retains amateur status, although competing in the professional-dominated Eastern Counties' League. The Harwich Gas and Coke Company felt that, considering the local interest taken in the team's progress, a tie-up window display would be appropriate. A display was arranged, set on a green background with gold, silver, and red relief. It attracted great interest. The whole of the work was carried out by the showroom staff.

Glasgow Gas Department issued its first warning of impending cuts during the winter on Oct. 6. The warning stated: "It is possible that, due to electricity warnings, the public are using gas where available. We are perturbed at the increase in consumption this week —10% higher than the same week last year. Plant which is at present under repair to meet the start of the winter load will not be available till the beginning of November, and consumers are asked to economize, particularly in the use of gas fires." The Department intimated that unless there was a drop in consumption, pressures may have to be reduced on the remaining days of the week.

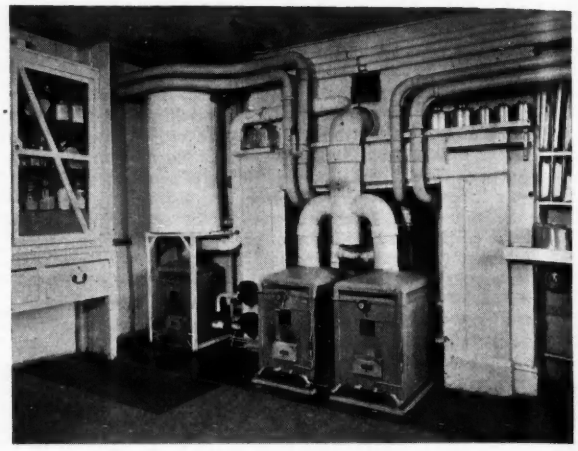
A Comprehensive Range of Equipment is shown by the Glasgow Gas Department at the Modern Homes Exhibition which opened at the Kelvin Hall, Glasgow, on Oct. 6 with major emphasis on cookers. Included in the show are Parkinson, Main, Cannon, F. and C. Sidney Flavel, Radiation appliances, and models by the Corporation's own Department. Water heating is also shown with Ascot, Maxol, and Radiation prominent. Electrolux refrigeration is featured on one section of the show, which has also panels covering gas economy, products from coal, and similar data. The exhibition runs till Oct. 30 and is expected to attract 300,000 visitors over the period.

Nottingham City Council has decided to increase the price of gas by a halfpenny a therm. This follows an increase of a penny a therm in April, and will come into operation after the meter reading for the September quarter. Alderman W. Sharp said that even with the increase he thought there would be a slight loss. Coal was now £2 10s. a ton compared with 20s. 7d. in 1939. It was agreed to borrow £250,000 additional capital for the provision of new mains and equipment to improve the supply to Beeston and Stapleford, and Alderman Sharp said the Committee would shortly have spent the £300,000 sanctioned by the Council in December for general extensions and other capital purposes.

A Lightning Strike involving about 60 operatives started at Limerick Gas-works on Sept. 30. The strike was brought about by the laying off of a workman who had been engaged by a firm who have a contract for installation of new plant at the gas-works. The workman was not an employee of the Corporation, and the operatives requested that this man should be given alternative employment in connexion with the gas undertaking. Mr. F. K. Thomas, Engineer and Manager, agreed to employ him in the following week but the workers contended that there was an agreement whereby their members would get first preference of all work available, and declined to accept the offer. Mr. Thomas has received permission to engage volunteers if any offer themselves in view of the fact that the strike is not official. It is understood that instructions have been given to the law agent to the Corporation to institute proceedings against the strikers under the Conspiracy and Protection of Property Act, 1875, which deals with the maintenance of municipal gas, water, and other services. The retorts are being kept at the requisite temperature by the engineer and three assistants, who work in shifts. Beds have been provided on the works so that all four will be available in case of an emergency. Meals are being supplied at the works by the wives of the four men engaged.

HOSPITAL HEATING SERVICE

Our photograph lends point to the convenience and efficiency of gas for central heating and hot water supply in small hospitals, nursing homes, and similar property where maximum comfort and minimum labour are required. The example illustrated is by Thomas Potterton (Heating Engineers), Ltd., in conjunction with the Ryde



Gas Light Company, at the Home Hospital, Eastridge Court, Ryde, which deals mainly with incurable cases and the aged. In place of solid fuel boilers previously used the following appliances were installed: a Potterton No. 19 "Victor" gas-fired boiler (rated 24,000 B.Th.U. per hour) for heating the drying room; a Potterton No. 2 "Rex" lagged storage set, 80 gall. capacity (83 gall. per hour raised 80° F.), for complete hot water supply; and two Potterton "Rex" No. 1 four-section gas-fired boilers (each rated 132,000 B.Th.U. per hour), for central heating via 34 radiators with 975 sq. ft. of heating surface.

ANNIVERSARY CELEBRATIONS

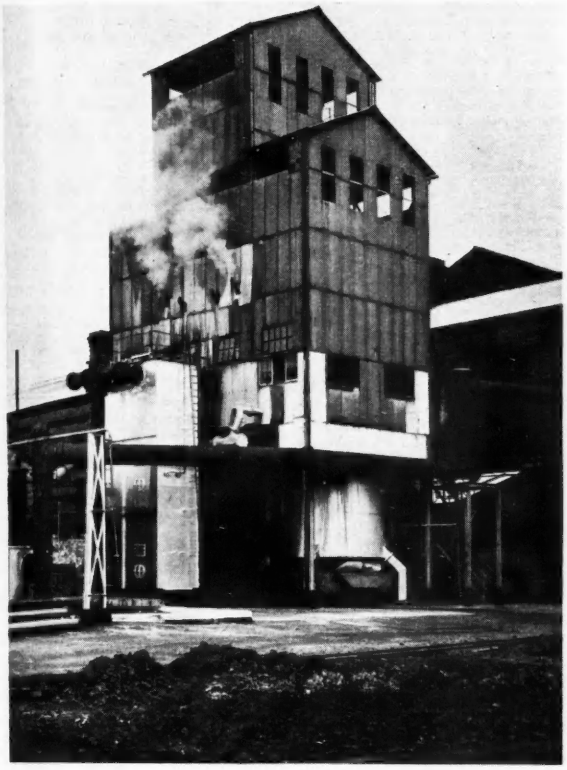
At the Cutlers' Hall, Sheffield, on Oct. 1 Hattersley and Davidson, Ltd., celebrated the 60th anniversary of the foundation of the firm, the 25th anniversary of their association with Robert Sorby & Sons, Ltd., and the 52nd anniversary of the incorporation of Wormald Patent Locks Company, Ltd. The celebration took the form of a social evening, during the course of which the employee with the longest service (Mr. S. Pattison, with a record of 58 years' service) was received by the Chairman and Managing Director of the parent Company, Hattersley & Davidson, Mr. P. B. Davidson. Five hundred were present at this pleasant function.

The firm was founded in 1888 by the late Mr. Albert Davidson, C.B.E., M.I.Mech.E., in partnership with the late Mr. Charles Hattersley, in premises in Arundel Street, Sheffield, as engineers and millwrights. In 1892 the growth of the business necessitated a move to more commodious premises in Norfolk Street, where the present Company still have their head office and certain manufacturing departments. By the turn of the century Mr. Hattersley had left, and the manufacture of tyre pumps and a number of requisites for the gas industry had been undertaken. Close association with the Wormald Patent Locks Company, Ltd., specialists in the manufacture of locks for prepayment meters, took place about that time. In 1908 the firm was incorporated as a private limited company, with the late Mr. Davidson as Chairman and Managing Director. In 1912 further expansion caused the Company to occupy premises at Cobner Works, Woodseats.

When the war broke in 1914 Mr. Davidson took a leading part in the co-ordination of the small factories of Sheffield for producing munitions prior to the foundation of the Ministry of Munitions on a national basis. Throughout the first world war the firm produced a large variety of products, and a memorable occasion in the annals of the Company was the visit to the factory in September, 1915, of H.M. King George V. September, 1923, saw the acquisition of Robert Sorby & Sons, Ltd., and with it the still older firm of John Wilson Marsden, Bros., & Co., famous ice skate makers, whose predecessors founded these associated businesses under the same management. In the second world war all the associated companies were engaged on direct and indirect war production. In 1943 they suffered the loss of their Chairman, Mr. W. E. Pickford, an early colleague of their founder, and his place was taken by the present Chairman and Managing Director, Mr. Philip B. Davidson, fourth son of the late Mr. Albert Davidson. The rest of the Board of Directors to-day consists of Messrs. A. Goldthorpe, W. G. L. Smith, Stuart Davidson, R. E. Pickford, and Brigadier A. Levesley, O.B.E., M.C., T.D., M.I.Mech.E.

ECONOMIC UTILIZATION OF COKE BREEZE

PRACTICAL SUCCESS AT SYDENHAM GAS-WORKS



"Gas Journal" *Photograph*

The Power Gas Corporation Mechanical Producer Gas Plant at the Sydenham Works of the South Suburban Gas Company.

THROUGH the courtesy of Mr. Tom Brown, Managing Director of the South Suburban Gas Company, we have welcomed the opportunity of inspecting at the Company's Works at Sydenham, an installation of mechanical gas producers utilizing coke breeze effectively and without difficulty. And by "coke breeze" we mean material containing a full quota of fines between zero and one-eighth or one-quarter inch diameter. The gas produced by this installation, which is a Power Gas Corporation plant, is used for heating horizontal retort settings. In the following account we are not going to be drawn into any argument concerning the relative merits of "hot" gas and "cold" gas for the purpose. We are concerned with the cold fact that the plant in question is operating smoothly, without fuss or tribulation, and is affording with every satisfaction an economic outlet for coke breeze. For the working data we are indebted to Mr. T. W. Gibson, the Works' Engineer.

Attempts to utilize coke breeze for making producer gas do not in any way constitute a new venture for the South Suburban Gas Company. The first endeavour at the Sydenham Works was the installation of two Trefois mechanical producers provided with a skip hoist and overhead fuel bunkers, a Connersville blower and exhauster with common drive, and a simple gas washing plant. The washed producer gas was used for heating horizontal retort settings. This plant worked reliably for 10 to 12 years, but with the fundamental disadvantage that in practice most of the material below $\frac{1}{16}$ in. had to be removed from the breeze. This limitation was attributed mainly to two causes—namely, a lack of grate area relative to the required output and the segregation of the coarse from the fine breeze in the process of feeding the top of the fuel bed.

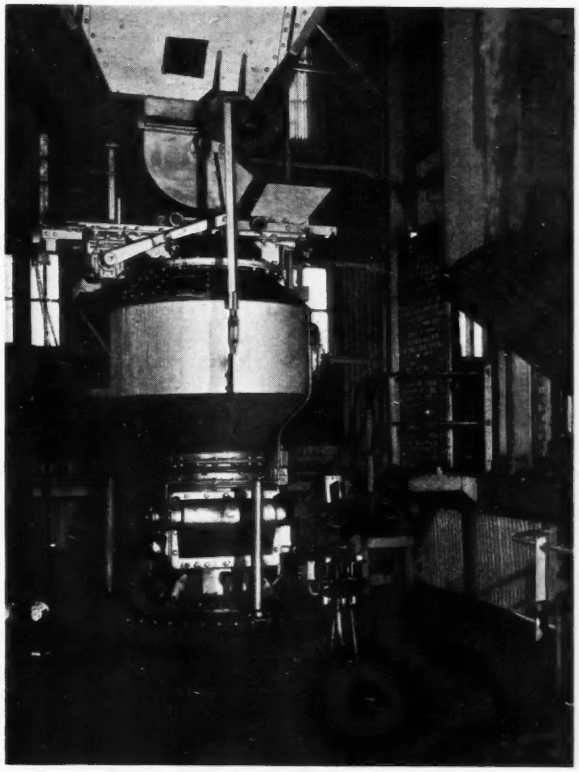
However, the experience gained with the Trefois producer was not wasted. Apart from the producer vessels themselves and the grates, the equipment was in good condition, and the Company approached the Power Gas Corporation regarding the substitution of the Trefois producers by two of more robust design and provided with feed arrangements designed to minimize the segregation of the various breeze fractions. The latter was a paramount consideration. The Power Gas Corporation undertook this work and the plant was in operation at the end of 1947. When we visited the plant Mr. Gibson explained to us that no claim is being made that it is as yet being operated to its fullest advantage and that experience is still being gained. Since its installation, however, the plant has successfully gasified breeze varying from 0-$\frac{1}{2}$ in. to 0-$\frac{5}{8}$ in. from which no particle of the fines has been removed.

Part of the gas made is at present being used as a diluent for the coal gas stream and the remainder to heat horizontal retort settings. It is appreciated that the latter is one of the least economical uses to which the washed gas could be put, and its transmission to the vertical retort house is under consideration.

The Sydenham Installation

The Power Gas producer plant at the Sydenham Works comprises two 10 ft. 6 in. generators, each with an overhead fuel hopper. Breeze is elevated to the plant by a twin skip hoist of 20 tons per hour capacity, and discharged into two 10-ton overhead fuel hoppers. The system used for feeding the fuel to the generators consists of an adjustable distributor capable of being raised or lowered to suit the fuel used, and is composed of a centre opening with 12 radial chutes ensuring that fuel is distributed without segregation to all parts of the fuel bed. This is an essential feature of the plant. Fuel is fed to the distributor from a small closed hopper located between the main overhead hopper and the producer. The small hopper is fitted with an interlocking feed valve. The fuel contained in this hopper forms a continuous column to the producer, and an electrically operated feed valve not only ensures that the fuel is kept in motion but also acts as an alarm to the operator when re-charging is necessary. The feed valve is then locked and the fuel hopper is recharged manually by means of a gravity feed valve at the bottom of the main fuel hoppers.

The generators are cylindrical vessels and are fitted with Banbury grates. Experience with the Banbury grate has, we were informed, been eminently satisfactory. Each generator has a water jacket which supplies steam for saturating the blast air. Ash and clinker extraction



"Gas Journal" *Photograph*

View taken at Charging Stage.

is by mechanical means, operated hydraulically using oil as the medium. The grate is rotated by means of a thruster, operated on a ratchet driving ring. Ash and clinker are removed by coming into contact with adjustable plates set at an angle in the space between the generator and outside plates of the water seal.

Air is supplied by a Connersville type blower, capacity 140,000 cu.ft. per hour, and the plant requirements are controlled by a Bryan Donkin diaphragm type governor, the surplus air being blown to atmosphere. Gas is exhausted from the plant by a Connersville exhauster having a capacity of 196,000 cu.ft. per hour. The blower and exhauster have a common drive, and are powered by a 30 h.p. electric motor. The gas is cooled by water sprays in the vertical outlet mains on the outlet of the generator, and is then lightly scrubbed in a washer using tar or creosote. The washer is designed in two sections, the first with baffle plates and the second packed with Lessing rings. The general arrangement of the plant can be visualized from the diagram we reproduce.

Working Results and Costs

We are able to give the following figures relating to the working results of the plant, together with costs of manufacturing producer gas. The working results are those of one of the producers of the installation and cover the period July-August of this year. Particular attention is drawn to the grading analysis of the fuel fed to the producer.

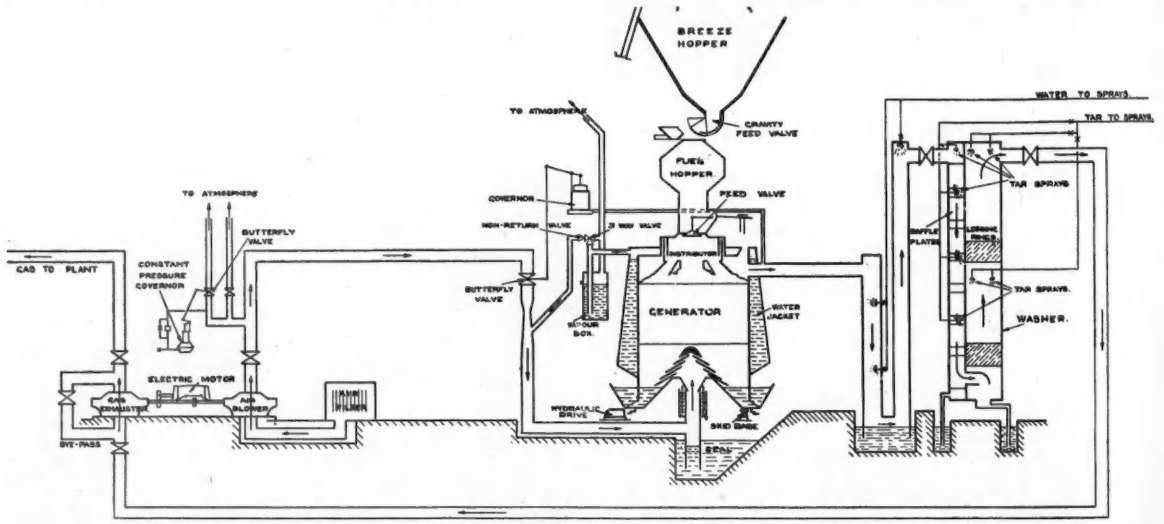
Working Results for No. 2 Producer; July-August, 1948

Fuel Fed Characteristics	
Average moisture content	14.9% by weight
Average ash content	14.6% D.B.
Average volatile matter content	5.0% D.B.
Grading :	
0 -¼ in.	40.8%
¼ in.-½ in.	40.2%
½ in.-¾ in.	19.0%
Calorific value	10,500 B.Th.U./lb. approx.
Clinker Removed	
Combustible matter content	25.0% D.B.
Combustible Matter Gasified per Week	
Breeze fed average per week	98.1 tons wet basis
Combustible matter fed week	71.3 tons dry basis
Combustible matter rejected with ash	4.1 tons dry basis
Combustible matter gasified	67.2 tons dry basis
Gas Made from Breeze	
Gas made per week	13,162,000 cu.ft. S.T.P.
Gas made per week	16,848 therms
Gas made therms per ton wet breeze	171.7
Cold gas efficiency	73% approx.
Characteristics of Gas at Washer Inlet	
CO_2	5.0 by volume
O_2	0.1 by volume
CO	25.0 by volume
CH_4	0.4 by volume
H_2	13.9 by volume
N_2	55.6 by volume
Calculated C.V.	128 B.Th.U.
Calculated S.G.	0.87 (air = 1.0)
Blast Saturation Temperature	55°C.

Cost of Producer Gas Manufacture

	Power Gas Breeze Burning Mechanical Producers (Using breeze at 30s. per ton) Pence per therm	(Using breeze at 20s. per ton) Pence per therm
Process		
Material	2.09	1.39
Supplies	0.05	0.05
Wages	0.46	0.46
Repairs and Maintenance		
*Wages and supplies	0.37	0.37
Works Services		
Steam, electricity, water, gas, road and rail transport	0.41	0.41
Capital Charges		
Interest and amortization at 6% on estimated present-day cost of complete new installation including ancillary plant of £30,000 for two producers.	0.28	0.28
	3.66	2.96

* Calculated at 8% of capital cost. The actual current cost is low since the plant is new and has not yet reached equilibrium with regard to repairs cost. Administration, &c., charges at works and head office level have not been included.



Diagrammatic Arrangement of Power Gass Corporation Mechani cal Producer Plant at the Sydenham Works of the South Suburban Gas Company.

MINISTRY OF EDUCATION COURSE FOR GAS TEACHERS

The first course for gas teachers since the war was held at the Rutherford College of Technology, Newcastle-upon-Tyne, from July 17 to 24. The 51 teachers who attended, most of whom are engaged in teaching gas fitting, gathered from all parts of the country and those from a distance were comfortably housed at Henderson Hall, one of the hostels of King's College.

The course was under the general direction of Dr. P. C. L. Thorne, M.A., M.Sc., H.M.I., and included a number of lectures on various aspects of the teachers' work. Some general features of part-time teaching were considered by Mr. A. MacLennan, of the Huddersfield Training College. The use of the voice was treated by Mrs. Ann Whitehead, of Leeds University Department of Education. There were lectures and practical work on the use of the blackboard and other visual aids. Mr. A. Cardwell, Head of the Engineering Department of the Rutherford College of Technology, dealt with the drawing aspect, and Mr. E. A. Taylor of Stewarts and Lloyds, Ltd., Corby, with visual projection.

The contribution of the Newcastle and Gateshead Gas Company to the success of the course was most valuable and outstanding. Mr. J. E. White and Mr. G. E. Anderson, both of that undertaking, gave lectures on the problems of utilization and manufacture respectively. The General Manager, Mr. E. Crowther, President of the Institution of Gas Engineers, opened the session, and the arrangements for visits were also made and carried through by that undertaking.

Visits were paid to Messrs. Palmers, of Hebburn, the Lemington Glass Works, and J. Russell (1928), Ltd., at each of which extensive and varied examples of the use of vast quantities of gas for heating were observed with interest.

One morning was devoted to discussions on the syllabuses and curricula of the Institution and the City and Guilds of London Institute. On this occasion there were present Mr. A. G. Higgins, Assistant Secretary of the Institution, and Lieut.-Colonel W. French, C.B.E., D.S.O., M.C., of the City and Guilds of London Institute.

The teachers present were enthusiastic in praise of the course, and it is hoped to hold a similar course next year, possibly for a somewhat longer period.

EASTERN DISTRICT TAR BOARD

ANNUAL MEETING AT IPSWICH

MEMBERS of the Eastern District Tar Board accompanied by about 40 surveyors, members of their staffs, and road tar contractors paid a visit to the Orwell Engineering Works of Ransomes, Sims, and Jefferies, Ltd., at Ipswich, on Sept. 16, as a preliminary to the annual meeting of the Board.

Originally established in 1789 for the manufacture of agricultural machinery, Ransomes, Sims, and Jefferies have now nearly 3,000 employees and their works occupy approximately 45 acres of covered floor space. The firm use gas extensively in their works, their annual consumption amounting to 58 mill. cu.ft. Gas is used for radiant heating in the various shops and on a considerable scale in paint drying ovens, some of which are of the " camel-back " type. The use of gas in various types of heating ovens is being steadily increased and is gradually replacing the old oil-fired furnaces. The gas-fired furnaces give far better results, the heated materials being much cleaner and without the oxidation which was so prevalent in the older types of furnace.

At the conclusion of the visit, members and guests adjourned to the Great White Horse Hotel for luncheon under the Chairmanship of Mr. J. Hunter Rioch, Managing Director of the Cambridge University and Town Gas Light Company, and Chairman, of the Eastern District Tar Board.

In proposing the toast of " Our Guests " Mr. **Hunter Rioch** welcomed on behalf of the Executive Committee of the E.D.T.B. the visitors to Ipswich and expressed his pleasure at seeing such a good representation of surveyors from the surrounding area. He warmly thanked Mr. H. H. Dawson, Director of Ransomes, Sims, and Jefferies, for the facilities provided for a most interesting tour of the firm's works —a visit which was keenly appreciated by all who participated.

Mr. **H. H. Pavitt,** Engineer and Surveyor to the Felixstowe Urban District Council, responded to the toast and thanked the Chairman and Executive Committee for their invitation to what had come to be regarded as one of the outstanding events of the year. He expressed the surveyors' appreciation of the technical service rendered by the British Road Tar Association and for the excellent advice which they gave in various ways. He hoped the nationalization of coal and gas would not interfere with the operation of the Association or the Eastern District Tar Board.

At the annual meeting which followed, Mr. J. Hunter Rioch (Chairman), Mr. Ronald A. Weston (Vice-Chairman), and Mr. E. H. Winch (Secretary) were re-elected, as also was the Executive Committee.

Work of the B.R.T.A.

Mr. **J. Davidson Pratt** (Chairman of the British Road Tar Association) then addressed the meeting, giving a general review of the year's work of the B.R.T.A. Reminding his hearers that the Association was established 25 years ago for the benefit of producers and users of road tar, Mr. Davidson Pratt emphasized that the Association was not a commercial organization in any sense; it had nothing to do with prices and it did not sell tar. It existed to provide technical service and advice to users and producers, and with this end in view co-operated on an equal basis with the Road Research Laboratory at Harmondsworth to find new and improved methods of using road tar for surface dressing, tar carpets, and dense tar surfacing. Why did tar on a road with an open texture surface deteriorate with the passage of time ? A durability test was at present being developed and was well on the way towards giving results which, it was hoped, would provide the answer to this question and enable an even more satisfactory tar to be developed in the future. The Association had conducted experiments on surface dressing in wet weather with the use of wetting agents, but so far it could not be said that any benefits followed their use. The weather immediately following the application of surface dressing was a far more important factor, but there was some indication that the application of wetting agents to the stone in wet weather had beneficial effects. Referring to the cuts made in funds and staffs for road maintenance, Mr. Davidson Pratt said that surface dressing was the best means of making the most effective use of the money available.

During the past year, he continued, the Association had distributed over 35,000 copies of the Code of Practice for Surface Dressing with Tar and had arranged demonstrations of the latest mechanical spraying and gritting equipment. The Association's film " Surface Dressing with Tar " had been shown to nearly 3,000 people and had promoted much profitable discussion. A great deal of attention has centred on tar carpets and experimental lengths had been laid using local tars and local aggregates. There was every reason to believe that with proper care in preparation and application, tar carpets were as good as open texture bitumen carpets.

Reminding his hearers that the Certification Trade Mark carried with it the guarantee that the material conformed to the British Standard Specification, Mr. Davidson Pratt said that the users of the mark were " policed " by an inspector who was free to examine the records and working of any users of the mark and to take samples for analysis at any time. The Association was not satisfied that the present standard specification was altogether as good as it might be, but they had to take into consideration the fact that there were all sorts of coals and methods of treating them, resulting in different conditions in different parts of the country.

With regard to the future, he did not feel that nationalization would lessen the desire of the gas industry to see that the best possible road tar was produced. A new industrial research organization has been set up—the Coal Tar Research Association—to deal with all problems relating to coal tar and its products, and it was desirable for the British Road Tar Association to link up with their research. This was all the more important because by 1951 more than 500,000 tons of additional tar would become available annually. It was necessary to find an economic outlet for this, and there could be no more appropriate market than that which was on our own doorstep—the roads of our own country.

A lively discussion followed, to which Mr. **W. E. Cone,** Technical Adviser, replied, mentioning among other matters that the B.R.T.A. had been acting in the closest collaboration with the Ministry of Transport since 1930, when it was requested to participate in the Kingston by-pass experiments. Two stretches of hot tarmac were

Surveyors and members of the Eastern District Tar Board at the works of Ransomes, Sims and Jeffries during the annual meeting at Ipswich. In the centre of the group are Messrs. J. Davidson Pratt (Chairman, B.R.T.A.), J. Hunter Rioch (Chairman, Eastern District Tar Board, and H. H. Dawson (Director, Ransomes, Sims and Jeffries).

laid, one with slag and one with granite aggregate. In all, 13 sections were laid representing all types of binder. In 1948 the two sections of hot process tar macadam—which had received two surface dressings—were still in excellent condition after carrying 17,000 to 18,000 tons of traffic daily and a great deal of heavy tank traffic during the war.

Mr. **A. Morwood**, County Surveyor, Isle of Ely, proposed and Mr. **R. A. Weston**, Norwich, seconded a vote of thanks to Mr. Davidson Pratt for his résumé of the Association's work, and to Mr. W. E. Cone for his replies to the numerous technical points raised. Following the meeting a number of members and guests participated in a golf competition at the Purdis Heath Course. After tea in the Golf Club House, the Chairman, Mr. J. Hunter Rioch, introduced Mr. A. W. Mather, Secretary of the Ipswich Gas Company and Captain of the Golf Club, who presented prizes to Messrs. P. Kinton, P. Goodricke, W. J. Collins Garrard, and F. E. Bayliss (County Surveyor, Cambridge), who returned the four best scores.

GAS COUNCIL AND AREA GAS BOARDS

TERMS OF APPOINTMENT

IN exercise of the powers conferred upon him by Section 5 of the Gas Act, 1948, the Minister of Fuel and Power has made the Gas (Area Boards and Gas Council) Regulations, 1948 (Statutory Instruments, 1948, No. 2233), copies of which are obtainable from H.M. Stationery Office (1d.). The regulations deal with the terms of appointment of members of the Area Boards and members of the Gas Council who are appointed by the Minister, and with the conditions of tenure of office as members. Other provisions relate to the quorum and proceedings of the Area Boards and Gas Council, and to the execution of instruments by them and the proof of such instruments. The regulations, which come into force on Oct. 18, are as follows.

Appointment and Tenure of Office

1. (1) Subject to the provisions of the Act and of these Regulations, the appointment of a member (*a*) of an Area Board, being a member appointed by the Minister in pursuance of paragraph (*a*) of subsection (2) of section five of the Act, and (*b*) of the Gas Council, being a member appointed by the Minister in pursuance of paragraph (*a*) of subsection (4) of that section, shall be for such term not exceeding five years as may be determined by the Minister before the appointment of such member, and upon such conditions as may be determined by the Minister, with the approval of the Treasury, either before the appointment of such member or, with his consent, at any time thereafter.

(2) Any such member as aforesaid shall be eligible for re-appointment.

Disclosure of Certain Information to Minister

2. (1) Every member of an Area Board or of the Gas Council shall forthwith disclose to the Minister full particulars of : (*a*) any interest or securities in any undertaking carrying on a business similar to that at any time carried on by that Board or Council which he, whether in his own name or in the name of a nominee, for his own benefit holds or acquires or to which he is or becomes entitled for his own benefit under any will or succession; (*b*) any trade or business in which he is or becomes engaged; (*c*) any appointment by virtue of which he is or becomes a director or officer of any body corporate or an officer or servant of any organization of workpeople.

(2) Any such member as aforesaid shall at any time, if so required by the Minister, sell or dispose of any interest or securities disclosed by him in pursuance of sub-paragraph (*a*) of the preceding paragraph to such extent and within such period as the Minister may direct.

(3) In this regulation the expression " securities " includes shares stocks, debentures and debenture stock.

Disclosure of Interest in Contracts to Board or Council

3. (1) Every member of an Area Board or of the Gas Council who is in any way, whether directly or indirectly, interested in any contract made or proposed to be made by that Board or Council shall disclose the nature of his interest at a meeting of that Board or Council and the disclosure shall forthwith be recorded in the minutes of that Board or Council; and such member shall not take part in any deliberation or decision of that Board or Council with respect to that contract.

(2) A general notice given by a member of an Area Board or of the Gas Council to the effect that he is a member of a specified company or firm, and is to be regarded as interested in any contract which may, after the date of the notice, be made with that company or firm shall, for the purposes of the preceding paragraph, be deemed to be a sufficient disclosure of the nature of his interest in relation to any contract made or proposed to be made as therein mentioned.

Vacation of Office

4. (1) If any member of an Area Board or of the Gas Council mentioned in Regulation One hereof (*a*) is absent from meetings of the Board or Council for more than six months consecutively except for some reason approved by the Minister, (*b*) becomes in the opinion of the Minister unfit to continue in office or incapable of performing his duties, or (*c*) at any time, after being notified of the Minister's disapproval thereof, either is engaged in any trade or business or holds any such appointment as is mentioned in sub-paragraph (*c*) of paragraph (1) of Regulation Two of these Regulations, the Minister may declare the office of that member to be vacant and notify the fact in such manner as the Minister thinks fit; and thereupon that office shall become vacant.

(2) Any member of an Area Board or the Gas Council mentioned in Regulation One hereof may resign his office by giving not less than three months' notice in writing to the Minister.

Quorum

5. (1) No meeting of an Area Board shall be held unless the chairman or the deputy chairman is present or, if neither of them is available, unless one of them has approved in writing of such a meeting being held. At any meeting of a Board four shall be a quorum.

(2) No meeting of the Gas Council shall be held unless the chairman or the deputy chairman is present or, if neither of them is available, unless one of them has approved in writing of such a meeting being held. At any meeting of the Council eight shall be a quorum.

Determinations

6. Every determination of an Area Board or of the Gas Council at any meeting of the Board or Council shall be taken by the votes of the members of that Board or Council present and voting or, in the case of difference between them, of the majority of such members; if the votes of such members are equally divided, the person acting as chairman of the meeting shall have a second or casting vote.

Minutes

7. Minutes shall be kept of the proceedings of Area Boards and of the Gas Council and any such minutes shall, if signed by a person purporting to have acted as chairman of the meeting to which the minutes relate, or of a meeting at which they were read, be evidence of those proceedings; and a meeting to which any such minutes relate shall, unless the contrary is proved, be deemed to have been regularly convened and constituted.

Deputies at Meetings of Gas Council

8. For the purposes of Regulation Three, paragraph (2) of Regulation Five, and Regulation Six hereof, the deputy chairman of an Area Board attending a meeting of the Gas Council in pursuance of the proviso to subsection (4) of section five of the Act shall at that meeting be deemed to be a member of the Gas Council.

Validity of Acts Done at Meetings of Boards and the Council

9. (1) Any Area Board and the Gas Council shall have the power to act notwithstanding a vacancy among the members thereof.

(2) All acts done at any meeting of an Area Board or of the Gas Council shall, notwithstanding that it is afterwards discovered that there was some defect in the appointment of a person purporting to be a member of that Board or Council, be valid as if that defect had not existed.

Authentication of Seal

10. The seal of an Area Board or of the Gas Council shall be authenticated by the signature of the chairman of that Board or Council, as the case may be, or of some other member of the said Board or Council authorized by that Board or Council to act in that behalf, and of the secretary or some other person authorized by the said Board or Council so to act.

Execution of Instruments and Mode of Entering into Contracts

11. Any instrument or contract which, if executed or entered into by a person not being a body corporate, would not require to be under seal, may be executed or entered into on behalf of an Area Board or of the Gas Council by any member, officer or servant of that Board or Council, as the case may be, generally or specially authorized by resolution of that Board or Council in that behalf.

Proof of Documents

12. Every document purporting to be an instrument executed or issued by an Area Board or by the Gas Council, and to be sealed with the seal of that Board or Council, authenticated in the manner provided by Regulation Ten of these Regulations, or to be signed by any member, officer or servant of that Board or Council, as the case may be, authorized by that Board or Council to act in that behalf, shall be received in evidence and be deemed to be so executed or issued without further proof, unless the contrary is shown.

Interpretation

13. The Interpretation Act, 1889, shall apply to the interpretation of these Regulations as it applies to the interpretation of an Act of Parliament.

GAS PLANT IN THE MAKING

ASHMORE, BENSON, PEASE AND CO.'S PARKFIELD WORKS

THE part played by gas equipment and foundries in the British export programme was displayed to members of the North of England Gas Managers' Association during their visit to the works of Ashmore, Benson, Pease, and Co., Ltd., Stockton-on-Tees, on Oct. 1. Over 60% of the Company's production goes overseas, important buyers being Holland, South Africa, Australia, and India. In many places staffs are maintained overseas to assemble equipment when it arrives at its destination.

The visiting party, which included the Mayor of Stockton, Alderman W. Lillystone, and Mr. G. R. Chetwynd, M.P., was welcomed to the works by the Vice-Chairman and Managing Director, Dr. N. E. Rambush, who said that, while the firm had many years ago started from scratch regarding the manufacture of gas plant, now one could hardly go to any part of the world without finding gas plant bearing the Company's name. One reason for that world-wide reputation, he went on, was that the firm tried to keep ahead of the times: this was shown in its education programme. To-day there were in trusted positions in the Company men who had come to it straight from school and, as they showed ability, were helped in their studies and training; and the firm awarded once a year a scholarship for three years at Leeds University. "We hope," said Dr. Rambush, "to have still more money to spend in this way."

The history of Ashmore, Benson, Pease & Co., Ltd., started in 1876, when, in the words of the founder, Mr. William Ashmore, "Nobody on Tees-side knew anything about gas engineering." But Mr. Ashmore was fortunate in having the advice and friendship of Thomas Newbigging, famous in his own right. Mr. Ashmore and his brother-in-law, Mr. S. While, built the Hope Iron Works in Parkfield for the construction of boilers, gasholders, and bridges. In 1883, Mr. R. S. Benson joined the business, being followed shortly after by Mr. E. L. Pease, whose connexion with the Company lasted until his death in 1934. A re-organization took place in 1885, when Mr. While retired. The business then became a limited company under its present title, with Dr. William Whitwell as Chairman, the works being extended and renamed Parkfield Works at the same time.

Having made steady progress through its initiative in undertaking to build what was then the largest gasholder in the world, Mr. E. L. Pease's invention of a telescopic gasholder, and its securing of contracts for the building of several bridges on the North Eastern Railway's Whitby line, the Company in 1901 acquired the newly-founded Power-Gas Corporation, Ltd., and accelerated its growth through an association with the leaders of the rapidly developing chemical industry. As founder of the Power-Gas Corporation, Dr. Ludwig Mond became associated with the fortunes of the Company, beginning a family connexion which has lasted until to-day.

The half-century of the firm was celebrated in 1935, when it was noted that several of the people who joined the Company when it started remained, and there were several others with 25 years' service. Length of service was also evident on the Board of Directors, though none of the founders remained. The then Chairman, Mr. Emile Mond, together with Mr. Robert Armitage, Mr. R. R. Crewdson, and the Managing Director, Mr. Wilfred Beswick, had all joined the Company 34 years earlier. The present Chairman is Mr. Wilfred Beswick, the Managing Director and Vice-Chairman Dr. N. E. Rambush (who now has 30 years' service), and other Directors include Major W. R. Brown, well-known in the blast furnace engineering field.

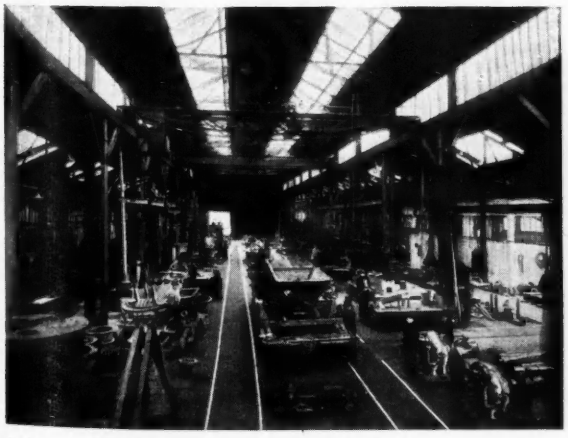
A steady process of development has enabled Ashmore, Benson, Pease & Co. to grow from a small engineering concern to one capable of undertaking the entire design and construction of great industrial projects.

With the 1914-18 war, the Company made a contribution to the national effort in several ways, one of them as consultants and advisors to the Ministry of Munitions on the construction of chemical factories and power stations. After the war, the Company expanded by extending its works and acquiring the adjoining works of Messrs. Robert Rodgers & Co., Ltd., and Messrs. Thomas Sudron & Co., Ltd., thus adding a new foundry and boiler works to their capacity.

At the visit to the works of Ashmore, Benson, Pease and Co., Ltd., Stockton-on-Tees, paid by members of the North of England Gas Managers' Association. Front row, left to right: Mr. F. L. Scaife (President), Dr. N. E. Rambush (Vice-Chairman and Managing Director, Ashmore, Benson, Pease & Co., Ltd.), Alderman W. Lillystone (Mayor of Stockton), and Mr. G. R. Chetwynd, (M.P. for Stockton). Back row, left to right: Mr. E. Crowther (President of the Institution of Gas Engineers), Mr. H. Forrest (Vice-President, North of England Gas Managers' Association), and Mr. A. S. Middleton (Hon. Secretary of the Association).

An instance of the Company's expansion is provided by its association with the Ford Motor Company's project for the complete manufacture of its products in this country. In the 1930s, Ashmore, Benson, Pease & Co. were commissioned first to act as consultants for the manufacture of plant to produce pig iron for the Ford factory, and later to design and construct the blast furnace plant and ancillary equipment. A policy of close co-operation with European and American specialists has aided the Company in its advancement.

At the outbreak of the 1939-45 war the Company came into close contact with the Supply Ministries and later became one of the five



A bay in the fitting shop at the Parkfield Works of Ashmore, Benson, Pease and Co., Ltd.

A general view of the huge boiler shop in the Parkfield Works, Stockton-on-Tees.

parent companies for the construction of the Mulberry Harbour. It also worked on Bailey bridge components, parts for landing-craft, and made 150 producer gas plants to be used as emergency gas-makers by firms scattered about the country.

With the return to peace, the Company has taken its part in reconstruction, particularly in designing and constructing 12 blast furnaces to aid increased production of steel, and in producing gas plant for both industrial and domestic purposes.

Examination of a list of larger gasholders manufactured and erected by Ashmore, Benson, Pease & Co. shows that it was responsible for the 10 mill. cu.ft. four-lift holder at Manchester, two holders for the Montreal Light, Heat, and Power Company, Canada, one of 6 and one of 3 mill. cu.ft. capacity, and for other holders in London, Leicester, Middlesbrough, Birkenhead, Stockport, Newcastle, Salford, Sunderland, West Hartlepool, Stockton-on-Tees, Bridlington, Liverpool, Scunthorpe, Barrow-in-Furness, and Durham. Overseas large holders have been erected in Japan, Canada, and Australia. Carburetted water-gas plants in hand or installed by the Power Gas Corporation, and fitted with chequerless carburettors, number 60, and the customers are in such far-apart places as Rio de Janeiro, Canada, Cairo, Australia, India, and many towns in Great Britain.

On their tour of the works the North of England Gas Managers' Association passed through the jobbing foundry, where are made gear cases for mining machinery, purifier boxes for gas-works, base plates for carburetted water gas plants, and cooling staves for various blast furnace plants. In the mechanized foundry they saw multiple small parts for the motor industry, and for textile machinery and Diesel engines.

Passing into the fitting shop, they saw how the rubber lining for the cell sides of a caustic soda plant for India is machined, the assembly of several hydraulic valve operators for carburetted water-gas plants, synthesis gas plants, and of a cyclic coke feeder for the latter, complete with automatic screening and weighing of the coke feed.

In the construction shops jackets for carburetted water-gas generators for use in the United Kingdom were under manufacture. There were large patented stainless steel evaporators, heavy forged and welded carbon dioxide and monoxide absorbers for two Dutch fertilizer plants (test pressure 2,750 lb./sq. in.), and heavy mild steel welded construction for four new blast furnace plants. Gasholders were under construction and other plant included a patent high-efficiency twin spiral heat exchanger.

Impressive facts which stood out on the tour included the high efficiency of mechanical handling in the works (which it is shortly hoped to extend), and the high precision of the work even on large steelwork. Co-operation with American engineers has been helping production, and the control boxes of carburetted water-gas plants are now coming off the production line in stream-lined form, topped with transparent plastic windows.

While parties were being conducted round the works by members of the staff, another party saw the research laboratory, test-house, and exhibition room. After the tour, the Company entertained their visitors at tea.

Members and guests of the North of England Gas Managers' Association during their visit to Ashmore, Benson, Pease & Co., Ltd., on Oct 1.

FLAME CLEANING AND PAINTING OF GASHOLDERS

We have received an interesting account from Mr. G. B. Franklin, Managing Director of Vanguard Structural Painting Contractors, of Harrogate, of the development and application of flame cleaning and painting of gasholders. The aim of the process is dehydration, removal of corrosion and its causes, warming the surface of the steelwork, and so preparing it for the immediate application of paint. The process may be successfully used for cleaning up patches of corrosion on structures without necessarily removing all old paint. The apparatus employed was designed in America and developed to its present stage for ordinary structures in this country by the British Oxygen Company. Its method of application to gasholders has been developed by Vanguard Structural Painting Contractors.

These photographs show the flame cleaning process in operation on a gasholder at the works of the Aspley Guise and Woburn Sands Gas Company. (United Kingdom Gas Corporation, Ltd.). Flame cleaning of seams (left) is shown, while the photograph on the right shows the seams after cleaning.

We are informed that the paints used in the process are identical to the paints generally employed by the firm. These paints are the result of the co-operation of the firm with British Paints, Ltd.

Among the points put forward are that, as a result of passing the flame cleaning nozzle over the steelwork, the intense dry heat of the flame completely and effectively removes all moisture content present either in corrosion or as a deposit on the steelwork. Under the influence of the flame, laminated corrosion has a tendency to explode-off due to the rapid differential expansion between the corrosion and the base metal. Corrosion which is not advanced to such a degree is dehydrated and can easily be removed, in the form of a powder, by wirebrushing. The scale which is not tightly bonded has the same tendency to explode-off, due again to differential expansion. Not all scale is removed and if possible pickling or weathering during construction should precede flame descaling. Acid salts are consumed or disintegrated, thereby neutralizing their effect on the paint or the metal surface. Prevention of settlement of further impurities on the surface during the period which elapses between cleaning and painting operation is brought about by convection currents and heat radiation from the metal surface. These influences will not permit the impurities suspended in the atmosphere to settle. Further, the flame cleaning operator is followed almost immediately by the painter, reducing to a minimum the time during which any impurities could settle.

"THE BASIC CASE FOR NATIONALIZATION"

MR. GAITSKELL INSPECTS COVENTRY GAS-WORKS

THE annual inspection by the Coventry City Council of the gas undertaking at Foleshill and the administrative centre at Gas Street on Oct. 6 was an occasion of more than normal importance in that it was almost certainly the last occasion on which the local authority, as such, would inspect its own undertaking, and that the company of visitors included Mr. Hugh T. N. Gaitskell, Minister of Fuel and Power. On his arrival in Coventry the Minister was received by the Mayor at the Council House, and the party then proceeded to Foleshill, where the morning was devoted to a thorough inspection of the works.

Accompanied by Colonel H. C. Smith, Deputy-Chairman designate of the Gas Council, Sir Frederick West, Past President of the Institution of Gas Engineers, Mr. C. H. Chester, Vice-President of the Institution, the Mayor (Councillor W. H. Malcolm), the Chairman of the Gas Committee (Alderman J. Howat), and the Engineer and Manager (Mr. J. E. Wakeford), Mr. Gaitskell was taken by lift to the top of the 250 ft. high M.A.N. waterless holder of 5 mill. cu.ft. capacity and then accepted an invitation to inspect the interior of the holder. On emerging from the extending staircase he complimented Mr. Wakeford on the excellent condition in which the holder was kept.

Sixty-Five Years' Record

In the course of the inspection of the works the visitors were told that in the 65 years since the Coventry Corporation acquired the undertaking from the original Gas Company for £170,345, the annual make had increased from 185 mill. cu.ft. to 5,800 mill. cu.ft. By last March the total capital expenditure reached £2,754,854, and loans outstanding amounted to £795,748. There were 42 miles of street mains in 1884; to-day there are 584 miles, and consumers now total 76,700.

The undertaking of the Kenilworth Gas Company was acquired in 1927 and that of the Bedworth Gas and Coke Company in 1930, bringing the authorized area of gas supply up to approximately 126 sq. miles. Bulk supplies to Birmingham, Rugby, and Nuneaton were inaugurated early this year; in the first two cases to augment gas supplied to consumers by the local undertakings, and in the case of Nuneaton to supply the total needs of the town, the Nuneaton Gas Company's station ceasing to make gas and becoming a distributing station only. Work was started on a high-pressure ring main encircling the city in 1928, to be carried out in three sections. The first was completed in 1930, comprising 10,000 yards of steel main with an auxiliary feeder to the Gas Street distribution station. The second section, comprising 4,400 yards, was completed in 1936, and the whole ring completed as a war measure in 1942. The bulk supplies to Rugby, Birmingham, and Nuneaton were made possible only through the existence of the high pressure ring main, and represent a load of about 1,000 mill. cu.ft. per annum, with a minimum of 800 mill. cu.ft.

At the beginning of the century the manufacturing station at Gas Street became too congested. The Foleshill site—originally 30 acres but since extended to 70 acres—was acquired; building operations started in 1902 and the first section of the new works was put into operation in 1908. The Gas Street works ceased to manufacture gas, and the premises were gradually converted to administrative, distribution, storage, and other purposes.

Extensions in Hand

Large extensions are now in hand to bring the Foleshill works up to a total capacity of 30 mill. cu.ft. per day. The first of these will be completed in 1949; another scheme is scheduled for completion by 1951. Extensions contemplated are as follows:

Carburetted water gas plant (3 mill. cu.ft. per day) by the Power Gas Corporation, Ltd.; continuous vertical retort installation (6 mill. cu.ft. per day), complete with mechanical producers, water-flow coke discharge by West's Gas Improvement Co. Ltd.; (a new development in electrical generation by utilization of the waste heat for driving a hot air turbine coupled to a 700 kW. alternator is under consideration); reconstruction of section "B" verticals in No. 2 retort house; water-cooled condensers and cyclone tar extractors, turbo exhausters in duplicate; electrostatic detarrers; washing and scrubbing plant; purifiers; oxide revivification shed; station meter; concentrated liquor plant; water cooling tower for a closed circuit of cooling water for condensers and other purposes; electric power transformer for A.C. supply; spiral guided gasholder (6 mill.cu.ft.); and gas compressors to deal with 500,000 cu.ft. of gas per hour with a maximum outlet pressure of 35 lb.

A new scheme of baths, changing rooms, and canteen facilities has also been approved by the Ministry of Fuel and Power and will be completed by 1950. This will provide the workers with the most modern equipment for bathing, refreshments, and recreation. The disposition of the plant on the Foleshill site is such that further extensions have been planned, and the works can be brought up to a total capacity of 60 mill. cu.ft. per day.

Following the inspection there was a luncheon at the Masonic Hall, presided over by the Mayor of Coventry and attended by some 130 guests.

Colonel **H. C. Smith,** Deputy-Chairman designate of the Gas Council, proposed the toast of the City of Coventry, a city which, he said, represented the modern development of a community established something like 1,200 years ago. Although the origin of the habitation was lost in antiquity there were many ancient and beautiful buildings which demonstrated that the spirit of the ancient city still lived, and had not been destroyed by the worst that the enemy could inflict on the city during the war. It was impossible to propose the toast of the City of Coventry without referring to Lady Godiva, whose husband founded a Benedictine monastery in the city; or to the fact that for some reason which he had never discovered it was a city to which unpopular people were sent. He had never heard of people being "sent to Birmingham." He purposely refrained from discussing nationalization.

Post-War Re-Development

Councillor **W. H. Malcolm, J.P.,** Mayor of Coventry, responded, and referred with particular satisfaction to the presence of the Minister of Fuel and Power, and Coventry's two Members of Parliament, Mr. R. H. S. Crossman and Mr. M. Edelman. He was proud of the city's progress towards recovery from the ravages of the war, and paid tribute to the part played by the women of Coventry. The determination of the people of the city was exemplified by the plan for the re-development of the city which had been proposed by the City Council and approved by the citizens, and had been inaugurated in Broadgate, which was looking beautiful that day with flowers which had been presented by the people of the Netherlands. The Council was determined to make the city a place of which their children would be proud. He regretted to add that at a meeting of the City Council the previous evening the price of gas had been increased, on the recommendation of the Gas Committee, by a halfpenny per therm, due to the increased cost of wages and coal.

Alderman **J. Howat,** Chairman of the Gas Committee, proposed the toast of the "Gas Industry," coupling with it the name of the Minister of Fuel and Power. He claimed that the Coventry gas undertaking was second to none, and the Foleshill Works was the largest single municipal manufacturing station in the country with the exception of Birmingham. Extensions were in hand with a view to increasing the daily output by 1951 to a total of 30 mill. cu.ft. The total area of the works site was more than 70 acres, and ultimate development of the works was planned to bring the output up to 60 mill. cu.ft. per day. This was a long-term policy envisaged by the Gas Committee and was designed to fit in with the task of the Area Board to be appointed under the Gas Act. Their policy was to make available the maximum quantity of gas at a minimum price.

During the last six years, in which the price of coal had increased by over 80%, the basic price of gas had risen by only about 4%. Such a result had been achieved by increased output and by the spreading of overhead and standing charges. It has been the policy of the Gas Committee to operate a very high standard of undertaking and to provide those who worked for the Department with facilities which would be of real benefit to them. He mentioned especially the welfare scheme developed at Foleshill and acknowledged the help and encouragement they had received in connexion with it from the officials of the Ministry of Fuel and Power. He expressed his sincere appreciation of the manner to which the permanent officials of the Ministry had helped the Department in regard to their extensions, which were to cost something like £1,500,000. The undertaking had arranged to supply some 800 mill. cu.ft. of gas annually in bulk to Rugby, Nuneaton, and Birmingham, and in affording those supplies they had been enabled to provide gas for areas which, before the extension of the mains to those other areas, had been beyond the reach of supplies. The Coventry Gas Department, he claimed, had a fine record of 65 years of public ownership, and on vesting date they would hand over to the State one of the finest undertakings in the country.

No News About Petrol—Yet

Mr. **Gaitskell,** replying to the toast, said it was with some timidity that he came to the hub of the motor car industry. Immediately before the lunch the Press had asked him if there was to be any announcement about petrol, and he had assured them there would not be anything of the kind. If the action they had taken against the black market could be regarded as successful, a part of the credit at least belonged to one of their own Members of Parliament, Mr. Crossman, who, while not actually the author of the scheme which was adopted, indicated at an early stage the lines on which they should proceed.

At first sight he felt there was something queer in his being asked to respond to the toast of the gas industry. For a year or more he had been concerned with getting the Gas Bill through. As they plodded away day by day—and almost night by night—he would look over to the public gallery and there he would see Colonel H. C. Smith watching their proceedings with eagle eye, running round to brief the Opposition from time to time, and at times asking the Government to do something if he thought it would be best. He did not think that either Colonel Smith or Mr. Chester would, in those days, have taken kindly to the idea of his responding for the gas industry. They would have felt it was a little premature, but such was the miraculous working of British democracy that they now regarded it as the most natural thing in the world.

Changes were to come about. The legislation stage was passed but they had not yet reached vesting date. Whatever differences there might have been in the past he felt there was a very widely understood desire for some change in the organization of the industry. He did not think it could be denied that they should have in the industry larger administrative units than they had had in the past—that was the basic case for nationalization, as stated in the Heyworth Report and discussed again and again during the passage of the Bill. Mention had already been made of what had been done in Coventry in the direction of a kind of grid system. It was such examples which had in effect blazed the trail for nationalization. It might be a matter for disappointment that they were to lose control of their undertaking, but they were partly responsible for it. If the industry were not nationalized its chances of continuing to compete successfully with other fuels—and the Government wanted competition to continue in that respect—would have been very much less. The industry would, he believed, under the new set up have a much better chance of developing in competition with other industries.

No Over-Centralization

He did not think they need have any anxiety that the new Area Gas Boards were going to be over-centralized. He believed everybody would agree that they were determined to avoid over-centralization. He was not saying that the set up which they had devised for the gas industry was superior to the set up in electricity or in coal, but it was a set up which was more appropriate to the gas industry. There was not the same case for centralization in the gas industry as there was in the other two instances. He wanted to make it quite clear that they expected a continuance of the same measure of local interest in gas supply as had existed in the past. This would be possible through the Consultative Councils which they would be setting up in due course, and on which the local authorities would be heavily represented.

He was grateful for the Mayor's announcement that the City Council had decided to put up the price of gas. He regretted to say that in the case of electricity a number of municipal undertakings seemed to have been rather diffident about putting up their charges immediately before nationalization, and therefore it fell to the Boards to put up the charges to cover the losses incurred by the local authorities. "You have behaved, if I may say so without giving offence to the electricity people here," continued Mr. Gaitskell, "in a very proper manner. You are determined to hand over an undertaking that is absolutely solvent—in fact with a large surplus." That was in full accord with the traditions of Coventry. In thanking the Mayor for his hospitality he described the gas-works as efficient, modern, and obviously well-planned and well-run.

Alderman **V. A. Hammond,** Deputy Mayor of Coventry, proposed the toast of "The Guests" and referred to the presence of the Mayor and Mayoress of Nuneaton, Colonel H. C. Smith, Sir Frederick West, former Lord Mayor of Manchester and Past President of the Institution of Gas Engineers, Sir Ben Smith, Chairman of the West Midland Division of the National Coal Board, Mr. King, Chairman of the West Midland Electricity Board, Mr. Crossman and Mr. Edelman, Coventry's two Members of Parliament, and Mr. P. N. Langford, who retired just over three years ago from the office of Engineer and Manager of the Coventry Gas Department.

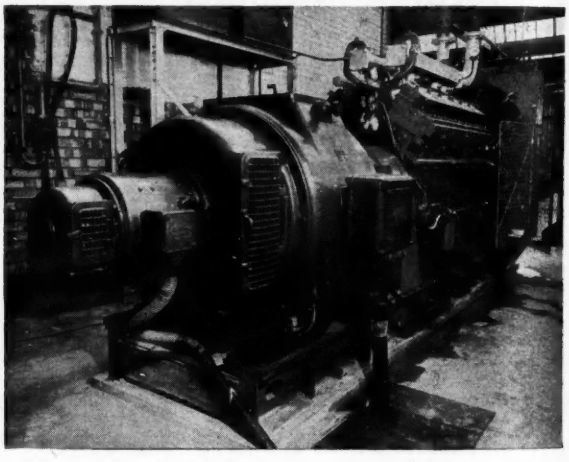
Sir **Frederick West,** responding, said the visitors had had the opportunity of seeing a gas undertaking which reflected great credit on public ownership over a period of 65 years, as well as on the skill and good management, first on Mr. Langford, and latterly of Mr. J. E. Wakeford. He regretted that there were still some people who imagined that in nationalizing gas the State was taking over a wasting asset. It was an entirely erroneous view, for the history of the industry for a great many years had been one of steady progress and it played a very important part in the industrial, commercial, and domestic life of the country. In other countries it was making even greater progress than in Great Britain. Under the Gas Act the Government was taking over a national asset which would contribute substantially to the well-being of everybody concerned.

Mr. **C. H. Chester,** Vice-President of the Institution of Gas Engineers, also replied and apologized for the absence of Mr. E. Crowther, President. Much had been said about administration and the merits of gas committees, but the engineer was also involved, and he paid tribute to Mr. Langford and Mr. Wakeford for their part in the development of the fine works they had inspected that day, which would vie with any he had had the pleasure of visiting. He hoped that the Minister, in his wisdom, would see to it that everyone in the nationalized industries stood on his own feet. That was all they asked in the gas industry and as gas engineers. On behalf of the Institution he would like to compliment the City of Coventry on possessing such a fine undertaking, and on possessing the spirit within its Gas Committee of keeping the undertaking right up to date—right up to the date of vesting, which apparently would be in the very near future. "They have gone forward—what a pity they had not gone forward to the same extent 20 years ago."

DIESEL GENERATING PLANT

Recent official statements on the question of a 20% saving on grid electricity supply lend particular interest to news of industrial concerns who have installed Diesel generating plant to achieve this end. It will be recalled that, consequent upon the widespread power cuts of 1947, the Government investigated the capacity of Diesel engine manufacturers to provide an adequate supply of generating plant which would help factories to supplement their mains power, and, basing their plans on the capacity found available, gave facilities for the immediate manufacture of Diesel electric generators to a total value of £10 mill. and a total capacity of 300,000 kW.

The majority of the power units built under this plan have now been installed in factories of a widely varying nature, among them being the Gothic Works of R. & A. Main, Ltd., at Angel Road, Edmonton. Diesel alternator plant was put down at these premises with a view to achieving a load shedding of approximately 33⅓% and comprises a Paxman Mark 12RPH 12-cylinder V-type engine direct coupled to a Crompton Parkinson 330 kVA four-wire alternator, 440/240 volts, 1,000 r.p.m., complete with radiator for cooling. Starting of this equipment is by a 24-volt starter motor which engages a toothed ring on the engine flywheel and is operated by press button switch. The engine lubrication system is initially primed by a hand pump and pressure lubrication then entirely eliminates hand oiling.



Both engine and alternator were supplied by the manufacturers mounted on a fabricated steel bedplate and with provision of standard foundation bolts; no special foundations were necessary, the steel underbed being grouted down into concrete flooring in a building adjacent to the owners' sub-station. This location was selected so that the alternator switchgear could form an extension to the existing switchgear in the sub-station. The alternator switchgear is of the same design as the existing gear, an arrangement which has given very satisfactory results, and Castell locks have been provided for safety purposes. The length of cable connecting the alternator to the switchgear is approximately 25 yds.

The 1,000 gal. fuel oil storage tank, from which the daily service fuel tanks are fed, is located in the corner of an adjacent store, in such a position that pipework has been cut to a minimum, and also with the advantage that the tank is only a few yards from one of the main roads of the works, thus facilitating discharge of oil from the oil company's tankers.

Through installation of this plant the electricity requirements of certain departments can be entirely obtained from the Diesel-driven set, but in the event of a total failure of the normal electricity supply, the switchboard is so arranged that the whole of the low tension switchgear can be fed from the alternator, thus ensuring that essential services can be kept running.

The plant was supplied by Davey, Paxman & Co., Ltd., of Colchester.

Stourbridge Town Council has accepted the tender of the Woodall-Duckham Company for the supply of new vertical retorts and coke screening plant at the gas-works, subject to approval by the Ministry of Fuel and Power.

GAS-WORKS MODERNIZATION AT COWES

MEMBERS of the Cowes Urban District Council, members and officials of other gas undertakings in the Isle of Wight, and representatives of the Ministry of Fuel and Power were the guests of the Chairman and Directors of Drakes, Ltd., Halifax, on Oct. 8, at an inspection of the new vertical carbonizing and ancillary plant installed by them at the works of the Cowes Gas Department, the fourth largest of the six undertakings on the island. The new plant has a gas-making capacity of 600,000 cu.ft. per day and is accompanied by an up-to-date coke handling and storage plant.

The site on which the Drakes vertical installation has been erected is in a position between an existing coal store and the quay. Consisting of reclaimed land, it presented considerable difficulties in regard to piling. The whole of the foundations supporting the carbonization-plant are formed with Franki compressed piles. The house is a steel framed structure, the steelwork being filled in with 4½ in. sand-faced bricks set in cement mortar. Steel cased windows ensure ample lighting and ventilation and the roofs are of the usual steel constructed type. Ample lighting is arranged in the roof, and where not covered by glazing the remainder of the roofs are covered by Bigsix corrugated asbestos sheets.

Latest Design

The carbonizing plant is of Drakes' patent design and comprises four settings each containing two retorts of No. 55 model, arranged in single units, each chamber being provided with an independent gas and air supply, with dampers and regulators grouped in easily accessible positions. The arrangement permits of the temperature of the settings being regulated with the minimum of effort to suit the varying output to meet any seasonal demand for gas. The method of upward draughting is such that when the required temperature is attained further adjustments are seldom necessary.

The retorts are constructed of Meltham toughened silica material throughout their entire length with the exception of the fireclay top mouthpieces and the segmental cooling chambers at the base. The combustion chambers and the setting linings are also formed of Meltham toughened silica. The whole of the brickwork forming the carbonizing plant is insulated with Moler insulating bricks. Inspection boxes are arranged in convenient positions on both sides of the bench for the purpose of making complete inspections of all the internal temperatures.

The gas for heating the retorts is provided by means of a battery of two twin producers, each producer being connected to a setting of two retorts, and fitted with step grate fittings. Fireclay material employed in the construction of the plant was supplied by John Morton (Fireclay Thornton), Ltd., and Williamson Cliff, Ltd. The steel structure for supporting the settings and producers is arranged so as to permit the customary expansion without any undue strain on any structural member.

The coke chambers and extractors are of Drakes' design and manufactured from their "Rafrakton" metal. The discharging doors are of the self-sealing pattern with centre fasteners. Atomizing sprays are fitted in each coke chamber to prevent the spread of fine dust during discharging operations. The throughput of each retort is individually controlled by means of masked ratchet gearing. Tecalemit forced lubrication is provided for all bearings on the extractors and drives.

The gas and tar offtake arrangement is Drakes' latest patented design and is unique in its formation. Dry gas valves are dispensed with and the whole system is controlled by means of an efficient and simple hydraulic seal, built together and forming a compact unit. The gas collecting main is connected to the foul main by a vertical pipe fitted with inspection window, and there are sprays for washing and cooling the gas, the liquor being continuously circulated by means of a Weir type direct acting steam pump. A duplicate pump is provided as stand-by.

Gas passing through the foul main is controlled by a 16 in. Bryan Donkin retort house governor with by-pass and then through a new foul main around two sides of the existing coal store to the works main. There is also a Peebles 10 in. safety relief valve.

The spent gases from the retort settings are conducted through steel cased brick lined flues to a Spencer Bonecourt waste heat boiler situated at the charging platform. The boiler has a heating surface of 1,220 sq. ft., and a working pressure of 120 lb., and is operated by a Sirocco fan, driven by a De Laval turbine. The boiler is complete with all the customary fitments, including a Weir vertical feed water pump in duplicate. For augmenting the steaming of the waste heat boiler when the plant is on minimum make a steel cylindrical firebrick lined producer has been provided with access from the main producer floor. The water softening plant is of the Kennicott type having a capacity of 500 gall. per hour, arranged on the ground floor on the opposite side to the producers. An electric lift of 25 cwt. capacity, made by E. A. Foulds, Ltd., of Colne, is provided for all purposes. It is fully automatic.

Coal is received in the existing store and fed into a receiving hopper whence it is jigger fed to the coal breaker or by-passed direct to a G.B. conveyor which is of the lipped type and travels vertically up and down the permanent gable end of the retort house and over the coal storage hoppers, which have a capacity of 48 hours' supply. The G.B. conveyor may also be used for delivering coke from the extractors to the producer and retort feed hoppers. The coal breaker and conveyor are both capable of dealing with 25 tons of coal per hour.

Coke from the extractors is transported by hand propelled skips via the lift for deposit in the producer feed hopper and for filling the retorts after scurfing, or alternatively the skips can be used for feeding the receiving hopper over the G.B. conveyor. The coke storage hoppers are adjacent to the new retort house and are of steel-framed construction with brick filling. Coke is received from the hand propelled skips running from the extractors and deposited in a receiving hopper which feeds a fully automatic, electrically operated skip hoist, thence by a band conveyor to the coke cutter reciprocating screens. The hoppers have a capacity of 100 tons and the whole structure is covered with the usual design of roof with Bigsix asbestos corrugated sheeting.

The automatic skip, coke cutter, and screens are capable of dealing with 10 tons of coke per hour. Outside chutes to carts for bagging, complete with debreezers, bagging platforms, bag weigher, and chute for taking the coke to the yard storage are all provided.

A new battery of atmospheric condensers has been built near the existing horizontal retort house, comprising seven separate towers, each 8 ft. wide, 12 in. deep and 24 ft. high. The towers are connected together by inlet and outlet branches so arranged that the gas travels upwards and downwards in each separate section. Mess rooms, washing facilities, &c., are provided in a building arranged for that purpose.

After the inspection the visitors were entertained to luncheon at the Fountain Hotel, at which Mr. J. A. Drake, Chairman and Managing Director of Drakes, Ltd., presided.

Jubilee of Public Service

Alderman **G. E. Mears**, J.P., Chairman of the Isle of Wight Gas Association, proposed the toast of the Cowes Urban District Council, and complimented the local authority on 50 years of successful public service.

Councillor **A. G. W. Holmes** responded on behalf of the Council and said that so far as the gas undertaking was concerned they had always endeavoured to give good service to the consumer. There had inevitably been criticism of the Gas Committee from time to time, but he had no recollection of the slightest objection to the expenditure on the new plant which they had inspected that day. When East and West Cowes became a single local authority and the Council acquired the West Cowes undertaking the people from East Cowes would have nothing to do with it, fearing perhaps that there might be a loss on the undertaking. When, in the not far distant future, the gas industry became nationalized there would be a sum of money due to the municipalities in respect of their assets, and he wondered whether their neighbours at East Cowes would expect to participate in that payment.

Councillor **W. H. Warrior**, J.P., C.A., Chairman of the Gas Committee, proposed the toast to the Contractors, and recalled the early days of gas supply at Cowes, when the Council, rather than pay for gas, persisted in lighting the streets with paraffin lamps. Eventually the local authority acquired the gas undertaking for £120,000, and the output had increased from 28 mill. cu.ft. to 140 mill. cu.ft., with a peak of 154 mill. cu.ft. in the year ended March, 1947, when the severe winter created an abnormal demand for gas. Drakes, Ltd., had been connected with the works almost ever since it was built, and some of the work they put in 50 years ago was still serving them well. The latest installation was the outcome of careful investigation by the Committee, and by Mr. R. A. Gretton (Engineer and Manager until last year) and himself as Chairman of the Committee, and they were very proud of the result. Many unexpected difficulties had been encountered, particularly in regard to the piling for the foundations, but they had been successfully overcome, and he felt that the new plant would be the envy of many of their neighbours.

Mr. **J. A. Drake**, in reply, remarked that as Chairman of a Company which had celebrated its centenary last year he had listened with interest to the various references which had been made to the Cowes undertaking of 50 years ago. His Company had enjoyed doing the job which they had inspected that day. They had given Cowes the best they could offer; it was a thoroughly up-to-date plant, but such was the progress of the gas industry that it would not be up-to-date for long. He paid warm tribute to Mr. Gretton and to Mr. C. B. Jones, who had succeeded him as Engineer and General Manager, and to all their staff for the co-operation which had been afforded throughout the contract. The site was an atrocious one and the foundation contractors had had to put in three times as many piles as they originally contemplated, but he was pleased to say that none of the extra cost involved would fall on the Cowes Urban District Council.